

Western Electric Co. Incorporated,  
Equipment Engineering Branch, Hawthorne

(2 Pages, Page 1)  
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METHOD OF OPERATION  
LINE CIRCUIT

Subscribers, Semi-Mechanical with Answering Jacks and Final Multiple -  
Special "A" Switchboard - Panel Machine Switching System.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

This circuit is for use in establishing connections with a subscriber of a full mechanical office to whom service has been denied.

2. WORKING LIMITS

This circuit has a maximum external circuit loop range of 750 ohms. It is used with semi-mechanical cord circuits whose sleeves are connected to battery through a maximum resistance of 129 ohms.

OPERATION

3. PRINCIPAL FUNCTIONS

The principal functions of this circuit are as follows:

- 3.1 Signalling the operator when the receiver is removed from the switchboard at the subscriber's station.
- 3.2 Extinguishing the line when operator answers.
- 3.3 Providing busy test on sleeve terminal of associated final multiple.
- 3.4 Returning to normal.

4. CONNECTING CIRCUITS

This circuit functions with any standard intercepting or zero operator's cord circuit.

DESCRIPTION OF OPERATION

5. When the receiver at the calling station is removed from the switchhook, the (L) relay operates, lighting the line lamp. When the plug of

(  2   Pages, Page 2 )

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the answering cord is inserted in the answering jack, the (SLA) relay operates. The (SLA) relay operated, closes a circuit to operate the (CO) relay and connects battery through the #19-BF resistance to lead "S", causing the sleeve terminal of the final multiple to test busy to hunting selectors. The (CO) relay operated, disconnects the winding of the (L) relay from the line thereby releasing the (L) relay. The (L) relay released, extinguishes the line lamp. When the receiver at the calling station is replaced on the switchhook the answering cord supervisory lamp lights as a disconnect signal. When the plug of the answering cord is withdrawn from the jack, the (SLA) relay releases, disconnecting the test battery busy from the final sleeve and releasing the (CO) relay, restoring the circuit to normal.

6. When the circuit is arranged for prepayment service, the (L) relay operates through its inner winding over the tip of the line through the sub-station set, to the coin ground.

7. On incoming calls from the final multiple the (SLC) relay operates. The (SLC) relay operated, closes a circuit to operate the (CO) relay and connects battery through the #18-G resistance to the sleeve of the answering jack to provide for a manual busy test. The (CO) relay operated, disconnects the winding of the (L) relay, preventing the line lamp from lighting. The (SLC) relay is held operated by the final selector until disconnection takes place. When the (SLC) relay releases, the (CO) relay releases, restoring the circuit to normal.

Eng. A.G.V.  
July 12, 1923.  
MH

Checked by: J.I.

Approved: H. L. Moynes  
E.R.C.